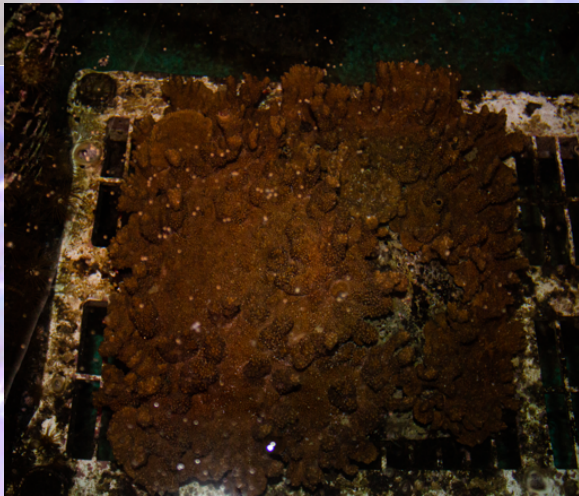


# Why Grow Big Corals Versus Lots of Little Corals: The Concept of Size Refuge

The Hawaii Coral Restoration Nursery (HCRN) has developed fast growth ex-situ growing techniques for a wide variety of Hawaiian corals. Because corals in Hawaii only grow on average between 1 – 2 cm/year, it is critical that colonies produced for outplanting be as large as feasible in order to maximize the ecological services and functions gained versus the time lag that would otherwise be incurred (along with the accompanying decreased survival) from putting out lots of small colonies as is frequently done with in-water nurseries elsewhere. In general, larger colonies tend to do better against both natural and man-made impacts.



Corals, like most animals and plants, have a defined size refuge, a size at which they are best able to survive the natural world around them. We know what that size is; it is the size at which any animal or plant shifts from putting most of its available energy directly into growth, to a state where some of that available energy is put into sexual reproduction. For many Hawaiian corals this size of first sexual reproduction is around 20 – 25 cm. At the HCRN we focus on outplanting 42 cm or 1 meter coral colony modules, way above the expected size refuge. This may help to account for why we have had extremely high survival rates for our coral outplants.



A HCRN 42-cm colony module releasing egg-sperm bundles July 2020. The release of future baby corals by a large nursery-produced coral validates some of the ecological services and functions provided by creating large corals to outplant instead of lots of small ones.



The world's first 1-meter long nursery-grown coral was produced at the Hawaii Coral Restoration Nursery and outplanted in May of 2020. In Hawaii, a 1-meter coral can take between 100 – 125 years to grow naturally; the HCRN is producing 1-meter colonies in under a year!

**Size matters  
when it  
comes to  
successful  
coral  
restoration!**

